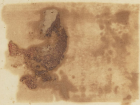


No 16

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Pen



On Intermittent Fevers.

By

Chamberlain

dated April 1. 1817

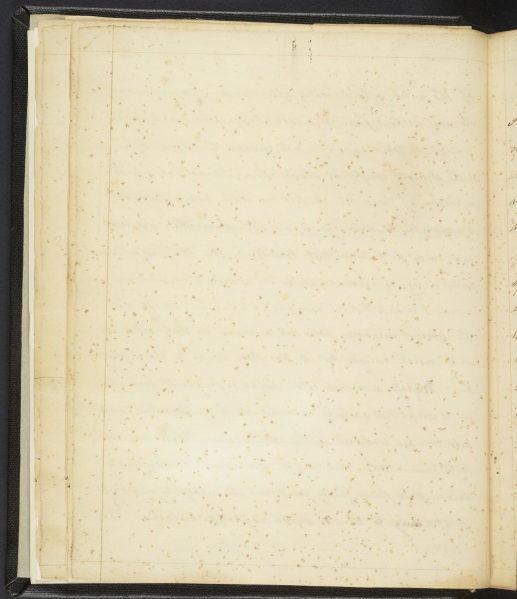
Prefatory Remarks

Toon the multiplicity of subjects presenting themselves to my view, I have found no small difficulty in selecting one for the present essay, possessing more claims to notice than another. To be the subject what it may, ~~whether~~ *original matter* can a student bring forth, unless its basis be experiment.

Fever, that grand outlet to human life, has from the earliest dawn of Medical Science, engaged the attention of man, yet let me ask, in what does it consist? This question which has so long been reiterated from every part of the world, has never yet been satisfactorily answered. Cullen defining fever to consist "in an increased frequency of the pulse, with an increase of temperature, preceded by a shivering, and accompanied by an interruption and disorder of several functions, particularly some diminution of strength in the animal functions." This is by no means a satisfactory definition of fever, there may be a great increase

x The Candidate acknowledged this sentiment & it
incorrect -

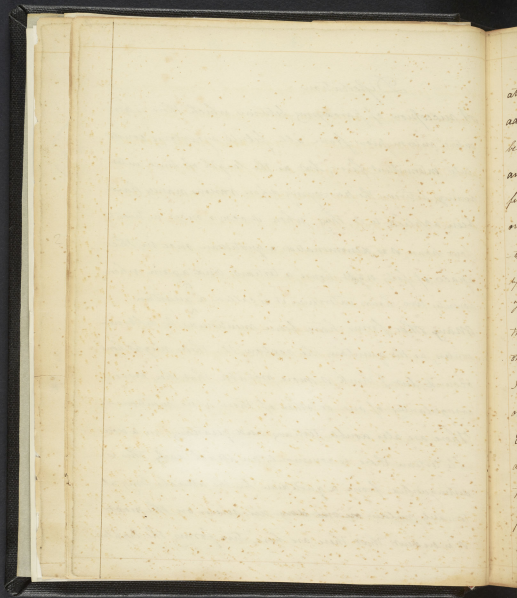
of the pulse, as immediately after running jumping and the like, without fever; it is not always preceded by a shivering, the temperature is not invariably increased, nor is the strength uniformly diminished. Imperfect as is this definition of fever it is the best we have, and a factum is preferable to no theory at all. Of fevers there are several kinds as Intermittent, Remittent &c. The first of these being a very common disease in the section of country in which I reside, I have thought it a proper subject for the present purpose. It is not a disease in itself attended with much danger, but it too often leads to those that are. Dropsy, a disease often fatal, is frequently brought on by neglected cases of intermittent fever. Scorbutus jaundice &c. are produced by the same cause. These diseases with many others that might be mentioned, consequent to intermittent fever, fully point out the necessity of promptly attending to this too much neglected disease.



Dysentery

A succession of paroxysms between which there is an
intermission from all febrile symptoms consti-
tute intermittent fever, but as the length of time inter-
vening between the paroxysms differs, various names have
been applied to it, thus, when it occurs once in twenty-
four hours, it is denominated a quotidian, once in the
space of forty eight hours, a tertian, and again, when
seventy two hours intervene it is called a quartan.

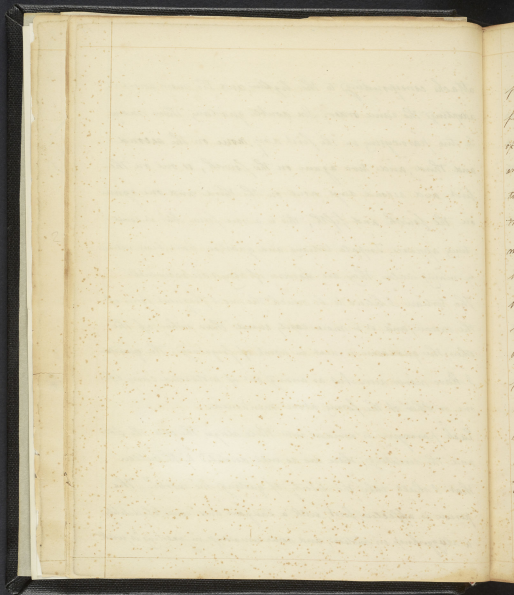
Many other forms have been mentioned by different
writers, as the quintan, the sextan &c, these might have
occurred, but I think it more probable that they were
irregularities of one or other of those above mentioned.
There are also double tertians and quartans: in a dou-
ble tertian there is commonly an attack daily, this is
distinguished from a quotidian by the attacks being at
ternate, milder ~~on one day~~ ~~discovered~~ on the next.
It is evident that there are here two forms, the lighter



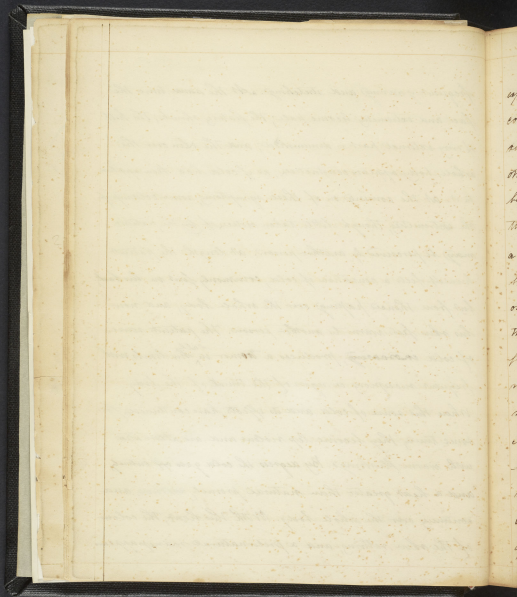
attacks corresponding to the lighter and the more severe, adopting the same order. In double quartans there may be two paroxysms on the first day, none on the second and third, and two again on the fourth, or one on the first and second days, none on the third and one again on the fourth and fifth, this is a rare form, but it sometimes appears. Triple tertians and quartans have been noticed by many writers, they are however of very rare occurrence.

The tertian I believe to be much the most frequent form of the disease, and it is more easily cured than either of the others; the quotidian is next in point of frequency; the quartan I have never seen but as arising out of protracted cases of one or other of the forms above mentioned.

Each paroxysm is divided into three stages, the cold, the heat, and the sweating; these are so well described by Dr. Cullen that I shall take the liberty of quoting his words. "The person is affected first, with a languor and some of acidity, a sluggishness in motion, and some uneasiness in exerting it with

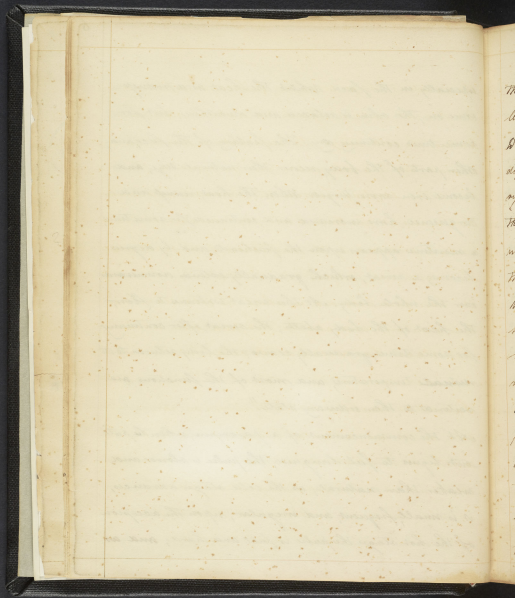


frequent yawning and stretching. At the same time the face and extremities become pale; the flatus shrink; The bulk of every solid part is diminished; and the skin over the whole body appears contracted, as if cold had been applied to it. At the coming on of these symptoms, some coldness of the extremities, though little taken notice of by the patient may be perceived by another person. At length the patient himself feels a sensation of cold, commonly first in his head, but from thence passing over the whole body; and now his skin feels warm to another person. The patient's sense of cold ~~increasing~~ produces a tumor ^{swelling} in his limbs, with frequent successions or rigors of the trunk of the body. When this sense of cold and its effects, have continued for some time, they become less violent and are alternated with warm flushings. By degrees the cold goes off entirely, and a heat greater than natural prevails, ~~persists~~, and continuing over the whole body. With this heat, the colour of the skin returns and a preternatural redness appears.



especially in the face. Whilst the heat and redness come on, the skin is relaxed and moistened, but for some time continuing dry. The features of the face, and other parts of the body, recover their natural size, and become even more turgid. When the heat, redness and turgescence have increased and continued for some time, a morbus appears upon the forehead, and by degrees becoming a sweat, which gradually extends downwards over the whole body. At this sweat continues to flow, the heat of the body abates; the sweat, after continuing for some time, gradually ceases; the body returns to its natural temperature, and most of the functions are restored to their ordinary state."

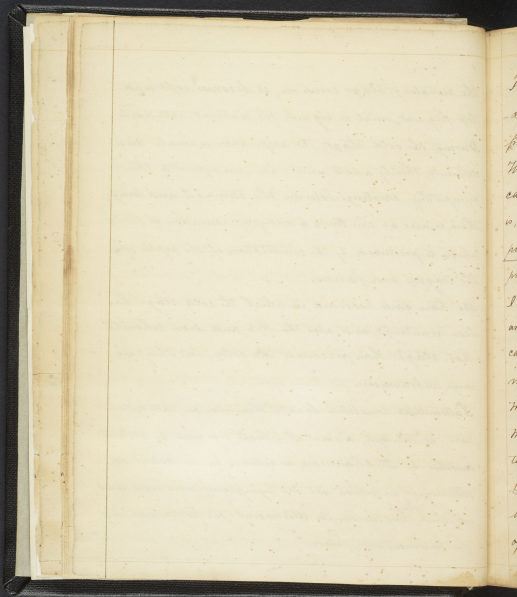
At the commencement of a paroxysm, when the patient begins to feel languid, the pulse is slower and weaker than natural; as the cold stage advances, it is small, frequent, and irregular; upon the accession of the hot stage the pulse is full and hard, and as



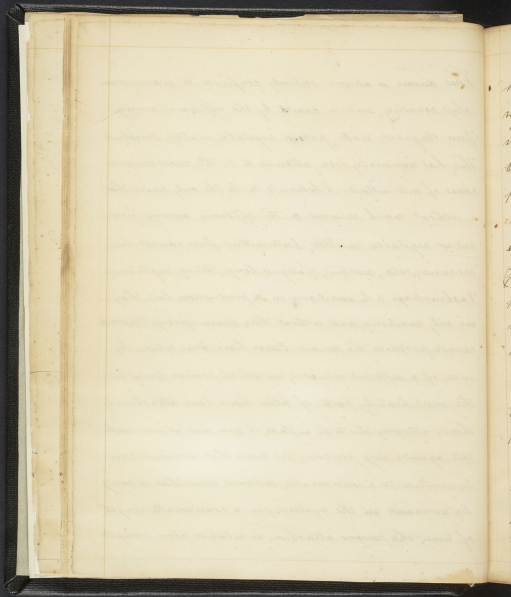
The sweating stage comes on, it becomes soft and
lip frequent, until it regains the natural standard.
During the cold stage, the respiration is small and
difficult, this by a late writer has been referred to the
sympathy existing between the stomach and lungs,
there is also at this time a constricting sensation of throat
which is produced by the constriction of the vessels of
the tongue and fauces.

We have cases recorded in which the cold stage has
been wanting, and also the hot, and even when the
hot stage has preceded the cold, but they are
very uncommon.

Intermittents sometimes locate themselves on particular
parts, as the eye, a case of which was seen by Dr. Clark,
another by Dr. Chapman, as related in his lecture on
this subject in which all the symptoms were well marked
ice, and ^{which} required for its removal the proper remedies
for intermittent fevers.



This disease is almost entirely confined to warm mar-
 shy countries, and is caused by the effluvia arising
 from stagnant water, putrid vegetable matter, marshes.
 This has universally been allowed to be the most common
 cause of intermittents; I believe it to be the only cause, that
 is, without marsh miasma or the effluvia arising from
putrid vegetable matter, Intermittent fever cannot be
 produced, cold, moisture, fatigue, long sitting, &c. &c.
 I acknowledge to be auxiliary in its production, but they
 are only auxiliary, and without their main spring Miasma
 cannot produce the disease. Cases have been cited, by
 men of a different opinion, in which persons living in
 the most healthy parts of cities have been attacked by
 them; allowing this to be a fact, it does not at all militate
 against my position; we know that miasma can
 be wafted to a considerable distance and that it may
 be dormant in the system for a considerable length
 of time; The persons attacked, as related above, might



have lived at no great distance from some putrid
 vegetable matter, or might very probably have been at
 some time not very long previous near a place of the
 kind. I do not think that a town is a proper place
 from which to draw conclusions, as to the cause of inter-
 mittent fever; we all know that a quantity of filth
 exists in every town; this is adequate to the production
 (for it has produced) yellow fever, and if yellow
 fever can be produced by it, why not intermittent, which
 requires, for its production, a much milder poison. Let the
 supporters of that doctrine produce, if they can, a case
 of this disease in a high healthy country, far remote
 from any marsh, stagnant water, or collection of
 putrid matter. Such a case I will venture to say
 cannot be found in the annals of medicine, unless in
 some person who had contracted the poison in another
 place; cold, moisture, night air &c. might then act
 as an exciting cause and call this dormant matter

Luis

into action.

Having given the causes, symptoms, and forms of inter-mittent fever, I come now to its management. 'This is very naturally divided into two parts, viz, the treatment proper during the paroxysm, and that during the apyrexia or inter-mission. First, of that proper during the paroxysm.

We generally follow the practice that nature dictates, and therefore when called to a patient in the first stage of the disease, we order him to be put in a warm bed, and warm applications to be made to his feet and different parts of his body; warm drinks should also be given and if he be much enfeebled some whey may be administered with advantage. Opium has been very highly recommended in the cold stage by D^r Trotter, in the case of thirty drops of the tincture opii, this I think is a very valuable remedy, but in some cases much more is required to relieve the disagreeable affection of the head and quiet the rigors that often attend. When the hot stage comes on

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The first thing to be done is to remove irritation, for this purpose we prescribe an emetic, but something its use is superseded by the spontaneous vomiting that occurs; in that case we have only to encourage it with warm drinks: having removed the source of irritation our next object is to produce a diaphoresis; to effect this various medicines have been recommended. In Europe the James powder is preferred, in this country, the antimonial preparations the Eupatorium Perfoliatum or the Spiritus Mindereri are generally used. I think the last article is best adapted to this stage, it is very grateful to the stomach and can be retained on the stomach when every thing else may be rejected, it is also more certain in its operation than either of the others. This practice is adequate to a majority of cases, but should considerate inflammation any action attended we should have recourse to bloodletting

The foregoing treatment has been merely palliative, I come now to that by which we put a final stop to

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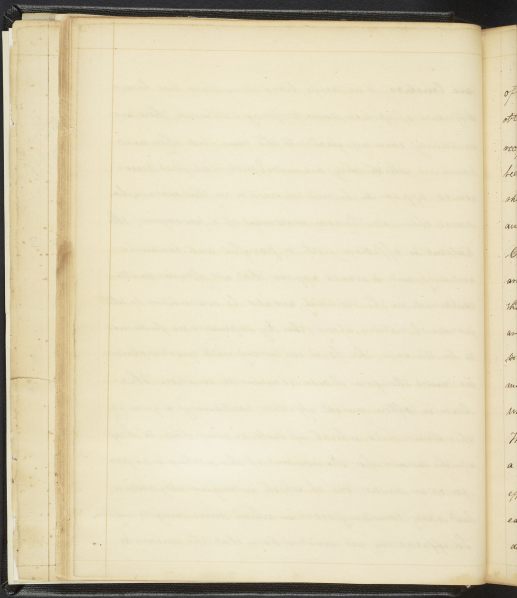
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the paroxysm; this forms the second part of the management of intermittents, viz, that proper during the intermission. The first remedy of which I shall treat is bloodletting. Various opinions have been entertained as to the propriety of bleeding in intermittent fever; some have thought it injurious under any circumstances, and others on the contrary employed it on all occasions, I believe, as is generally the case, that the truth lies between them. Called to a patient with a full pulse, flushed countenance, great heat, thirst &c. I should undoubtedly bleed him, he might, and probably would recover without it, but, to use the language of a man, whose talents were equalled by nothing but his victory "you would not attack an enemy with infantry alone when you had, cavalry artillery &c", exactly so is the case with bloodletting in the disease of which we are treating, often some day will often cure it, and indeed, it will often spontaneously subside, but this is

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not a sufficient reason for laying aside those remedies
 by which a cure can speedily be obtained. Bloodletting
 however will not of itself effect a cure, but it will mod-
 erate the violence of the paroxysms very much, the cold
 stage will be shorter, the hot not so disturbing, and the
 sweat not so copious, and consequently not so debilitating;
 besides these advantages it paves the way for other re-
 medies, which would before have been injurious. As much
 pleased as I am with the success of bloodletting in in-
 termittent fever in particular cases, yet there are many
 in which it is wholly inadmissible; should the system
 be much debilitated, and the pulse weak, no one
 would for a moment think of abstracting blood:
 nor would I upon every slight attack of intermittent
 fever, have recourse to venesection; very many
 cases may very readily be cured without it, and
 where that is the case I would by no means bleed.
 The next class of remedies of which I shall treat

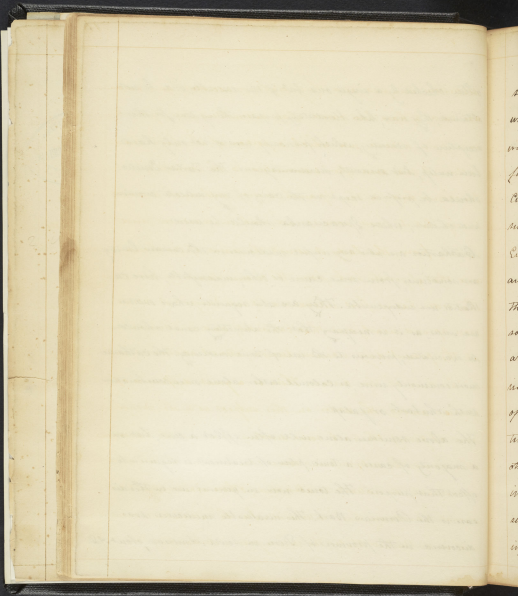
are Emetics. Here as in bloodletting there has been a difference of opinion, some preferring cathartics, there are in many cases adequate to the cure, but there are some in which they are not. Emetics at first seem would appear to be contraindicated in this disease, because often at the commencement of a paroxysm, the patient is affected with a painful and continued vomiting, and it would appear that all offensive matter contained in the stomach, would be evacuated by the powers of nature alone, this by experience we find not to be the case, the fever continuing with great violence; we must therefore have recourse to emetics. The liver is often much affected, containing a quantity of vitiated bile, which of itself is competent to keep up the disease; for the removal of this nothing is so proper as an emetic, one of which will generally answer, but cases sometimes occur in which more may be required. So efficacious are emetics here, that the disease is



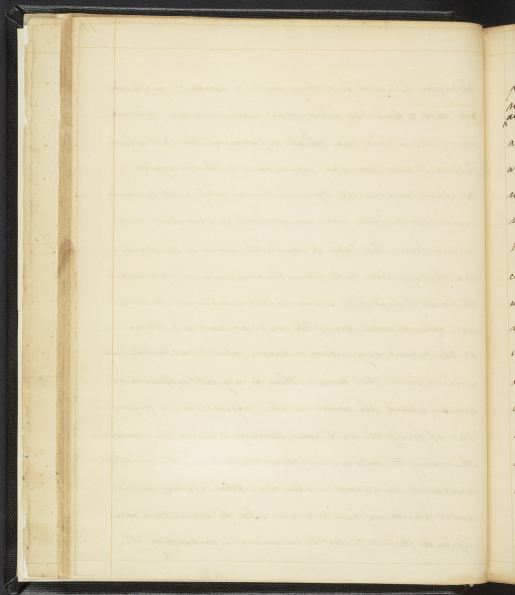
often checked by a single one, but if this desirable end be not obtained, they will, like bloodletting, prepare the system for the reception of remedies, which previously would not only have been useless, but ^{even} manifestly disadvantageous. The Tartar Emetic should be preferred except in the case of very delicate women and children, where Ipecacuanha should be used.

Cathartics are also very useful medicines in this disease. Emities are sometimes, from some cause or other, inadmissible, here Cathartics are indispensable. They are also requisite whose action is weak, as it is necessary that the alimentary canal should be evacuated previous to the use of Tonic Medicines. The Cathartic most commonly used, is Calomel either alone or in combination with rhubarb or jalap.

The above remedies alone will often effect a cure, but in a majority of cases, a tonic plan of treatment is required to effect that purpose. The tonic now in general use in this case is the Peruvian Bark. This invaluable medicine was discovered in the province of Peru in South America, about 1620.



restored him and a thirty eight, by accident; an Indian
 was said to have been cured of an intermittent fever, by drinking
 water from a pond into which a portion of the bark had
 fallen. It was soon after administered to the countess of
 Cinchona, lady to the Spanish viceroy, with such success
 success that its name soon spread both in America and
 Europe; from this lady it derived the name of Cinchona;
 and that of Jesuits bark from the circumstance of one of
 that order having first introduced it into Europe: it very
 soon spread nearly over that continent, and is I believe
 at the present day, wherever known, almost exclusively used
 in the cure of this disease. There is a great difference of
 opinion among the writers on this subject as to the proper
 time of giving the bark, some directing it during the paroxysm
 others during the intermission; some commencing the use of it
 immediately the patient is attacked; others waiting until
 several paroxysms have intervened. In the intermittents occur-
 ring in the United States, the intermission is undoubtedly the



proper time for giving the medicine. It should be given in substance in doses of a scruple every hour until within a short time of an expected attack, when it should be discontinued, for if given at that time or during the paroxysm it invariably aggravates every symptom. To the question, whether or not the bark should be given immediately upon an attack of intermittent fever? I would answer, it should be given as soon as the proper evacuating have been procured and not before. It is the practice in the West Indies of giving an ounce ~~of~~ dose, every morning and no more during the day; could this be retained it would perhaps be a good practice, but I believe few stomachs will be found that can bear as much. The stomach is often in such an irritable state, that the bark in substance cannot be borne in the smallest doses, here we should substitute the infusion or decoction, and if this too should be rejected we must resort to injections; this method however will not be submitted to for a sufficient length of time, to effect any great advantage in adults; it is

Therefore only applicable to the cases of children; and here
the rectum often gets in so irritable a state, as almost to
prevent the introduction of the pipe; a small quantity of
laudanum in each injection will obviate in a great degree
this defect. It has also been recommended to apply it ex-
ternally; either by sprinkling it over the sheath, by bathing the
it in a strong decoction, or by gutting a quantity of it
in a flannel jacket to be worn by the patient next the
shin; this last mode I believe is preferable; it is however appli-
cable only to very delicate constitutions, and to children, and
happily there are the only cases in which it is ever necessary
to employ it in this form. The bark sometimes produces
constipation, here a little rhubarb should be combined
with it, but if on the other hand it should have a contrary
effect, a small quantity of laudanum may be used in
conjunction with it.

A number of medicines have been proposed as substitutes for
the Coniaria Bark in the case of intemperate use of that

mention a few of the most efficacious; I commenced with those of our own country, of which one of the best is the *Sapotaria Virginiana*; this has been very highly recommended; when given alone is sometimes producing very beneficial effects, but it is a much more valuable remedy when combined with the bark. The *Eupatorium Perfoliatum* has been highly spoken of by Dr. Hosack who used it exclusively in this disease and with great success. Dr. Bartow was much pleased with the powers of the *Prunus Virginiana*; being to the practitioners here joined it, when with evident advantage. The *Liriodendron Tulipifera* or common poplar was a favourite remedy of Dr. Rush; he preferred it to all others, the bark only excepted; Dr. Bartow also used it with success, and I have lately been informed by a very respectable practitioner of Virginia, that he used it with nearly the same success as the bark itself; he used the bark of the root in rather larger doses than the *Cinchona* and in the same form. Many more of our native medicines have been used, but I shall only mention one

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other, the *Cornus Florida* or common dogwood, this I think should hold the first rank among the indigenous articles of our country, in the cure of intermittent fever, the bark of the root is the part employed, it is given in rather larger doses than the Peruvian Bark. In the lower parts of Virginia, where this disease is perhaps, as frequent as in any part of the United States, this medicine is much employed by the poorer classes of society and with very great success.

Gum kino may be used with advantage in cases of intermittent fever accompanied with low inflammation.

The angustura was introduced as a remedy for intermittent fever a considerable time past, it was at first thought superior to the Bark, it however soon lost its credit; but within a short time past has again come into notice. It is more grateful to the stomach, and therefore may sometimes be employed where the bark is inadmissible.

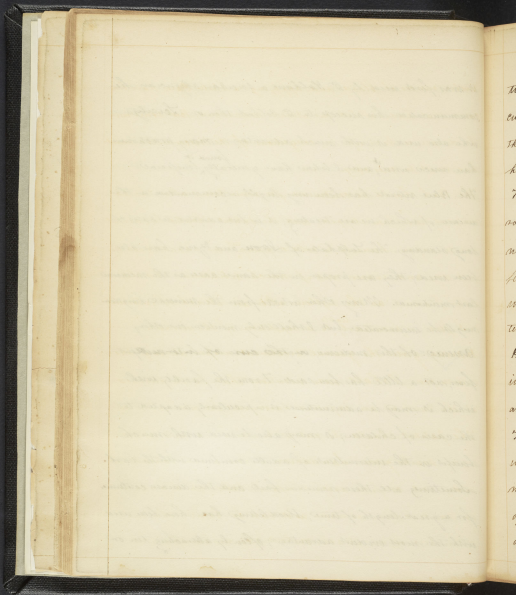
Carbone has recently been recommended in this disease

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It was first used by Dr. Halkam a scissian physician, he communicated his success to Dr. Collet then in Society, who also used it with much advantage, many practitioners have since used ^{it}, and I believe have generally ^{found it} beneficial.

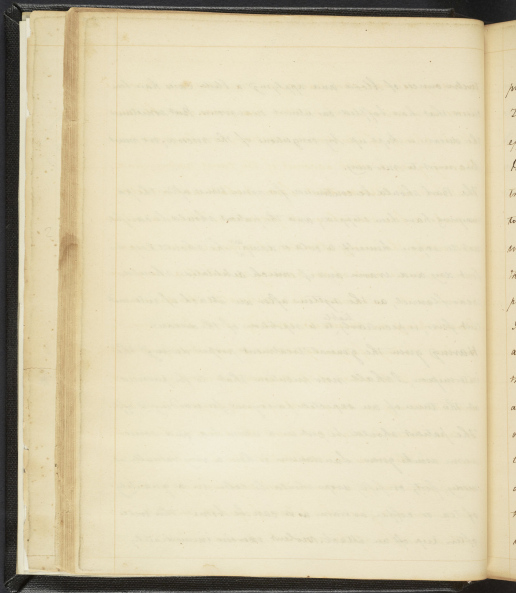
The Blue vitriol has been very highly recommended in the disease of which we are treating, it is best adapted to cases of long standing. The Sulphate of Iron and Zinc have also been used; they are proper in the same cases as the medicine last mentioned. Many other articles from the Mineral kingdom might be enumerated, but I shall only mention one other, Arsenic: of this medicine, in the case of ~~intermittent~~ fever, not a little has been said. From the facility with which it may be administered, it is peculiarly adapted to the cases of children; it may also be used with much benefit in the intermissions of adults combined with the last. Sometimes all these remain fail and the disease continues for a great length of time, blood-letting has here been used with the most evident advantage; often by abstracting ten or



Twelve ounces of blood and applying a blister case have been cured that had baffled our utmost endeavours. But sometimes the disease is kept up by congestions of the viscera, we must here resort to mercury.

The Bark should be continued for some time after the paroxysms have been stopped, and the patient should be careful not to expose himself to cold or damp^{air}, he should keep his feet dry and warm and if much debilitated, should wear flannel, as the system after an attack of intermittent fever, is peculiarly ^{liable} to a repetition of the disease.

Having given the general treatment proper during the intermission, I shall now mention that, to be pursued at the time of an expected paroxysm, for warding it off. The patient should be put in a warm bed and some warm drinks given. Sassaaparilla is here a very valuable remedy, forty or fifty drops should be taken in a quantity of tea or coffee, as warm as it can be borne; this will often keep off an attack. Violent exercise immediately,



preceding the expected paroxysm has sometimes stopped it. Terror or a violent fit of passion has produced the same effect. Change of situation is sometimes very beneficial.

Having given a short account of the cause, nature, and treatment of intermittent fever, I shall now proceed to make a few remarks on its prevention. This is a subject well worthy the serious attention of medical men, since there are some parts of our country, in which a large proportion of the inhabitants have annually this disease.

Persons living in miasmatic country, should avoid, night air, long fasting, fatiguing exercise or any thing predisposing the system to the action of the miasma; particularly getting wet, and remaining in damp clothes for any length of time. Rows of trees should be planted between the houses of the inhabitants and the source of exhalation. Much benefit may be derived from taking a dose of Bark every morning, during the summer and fall: this I have frequently seen attended with success. The clothes should be changed agreeably to the

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varieties of temperature; it is very essential that this should be attended to, as the changes of weather are often so great, that half half the persons in a family are attacked with an ague in a short time of each other; this may frequently be prevented by the precautions I have mentioned, and I believe were it more generally adopted, cases of intermittent fever would be rare, compared to what they are at present.

